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(74) Representative:

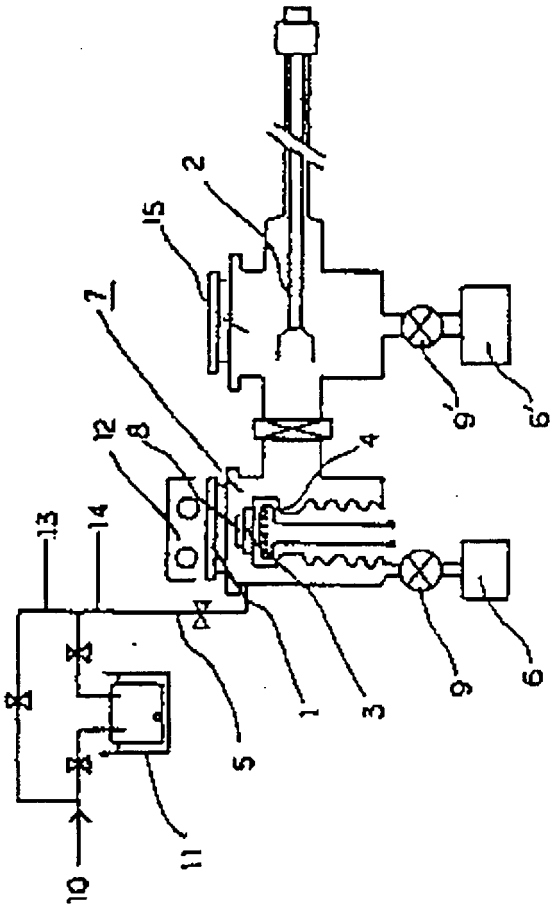
(54) MANUFACTURE OF SEMICONDUCTOR THIN FILM

(57) Abstract:

PURPOSE: To form a semiconductor thin film with superior orientation on a single crystalline or amorphous single crystalline substrate by photo-discomposing a mixture gas consisting of fluorosilane, silane or, desirably, hydrogen.

CONSTITUTION: A single crystallineor amorphous single

crystalline substrate whose surface is cleaned with washing or etching is placed in a thin film forming device 7 which has at least a light permiating window 1, a substrate holding means 3, a substrate heating means 4, a gas introduction means 5 and a vaccum discharge means 6, and the substrate is heated to 100W400°C under vaccum discharge. The material gas is supplied to the said device, with the flowing ratio of silane to fluorosilane being 0.5W50 and the flowing ratio of hydrogen to the fluorosilane being more than twice he former. As the fluorosilane, SiH4-nFn(integer of n=1W3) or Si2F6 is usable. As the silane, monosilane, disilane, trisilane expressed with SimH2m+2 (integer of m=1W3) are usable. As the III group compounds to be added to the mixture gas, dibolane (B2H6) is usable. As V group compounds, phosphine (PH3) or arsine (AsH3) is usable.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